Updates since the last meeting Météo France

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26th Annual Meeting WGCEF, 11th/12th November 2021

Overview :

– **Covid 19 : Back to Normal… Until When ?**

– **Weather Events :**

  ➤ **"Aurore"**

  ➤ **Record Rainfall Amounts, a Flurry of Records...**

– **Environmental Action Plan**

– **Models : Upcoming Changes :**

  ➤ **A Revolution in the Ensembles ?**

Covid 19 : Back to Normal… Until When ?

Situation near normal :
operational activities: physically at work for all positions
other (non operational) activities: possibility of working remotely up to 3 days out of 5 days a week
Wearing a mask mandatory
Unfortunately, as everywhere in Europe, contaminations on the rise
Vaccination rate in France: almost 70% of whole population fully vaccinated

Weather Events :

"Aurore"

On October 20/21 First windstorm of the season, named "Aurore" by MF,
  One of the strongest windstorms recorded for October in France,
  Big impact on electricity network: 250 000 homes without electricity
  System very difficult to predict (MeteoLux article thanks to Luca)
  Gusts connected to the cold front, back-bent occlusion or warm-front,
  convective aspect (tornadoes)

Warnings were to "light"
  Attention paid to the behaviour of the new version of ECMWF model because
  of the modifications of the gusts calculation since October 12
  (in this case gusts largely underestimated),
  information already shared within the storm-naming group,

Interesting feedback from WGCEF ?

Record Rainfall Amounts, a Flurry of Records…

For the last few years Noticed that, in every "active" situation
we beat rainfall records very easily (expected and consistent with climate change...)
Nevertheless difficult to manage/resize the thresholds of precipitations warnings,
For example:

Last October 2nd there was a red warning situation over NW France (return period >100 years 24 h accumulated precipitations) : there was very little damage, we were reproached for having overestimated the level of the warning.

Difficult: facing events never seen before, capability of forecasting them, how to calibrate the right level warnings in terms of expected impacts.

Environmental Action Plan

Météo France has just adopted a plan for the environment

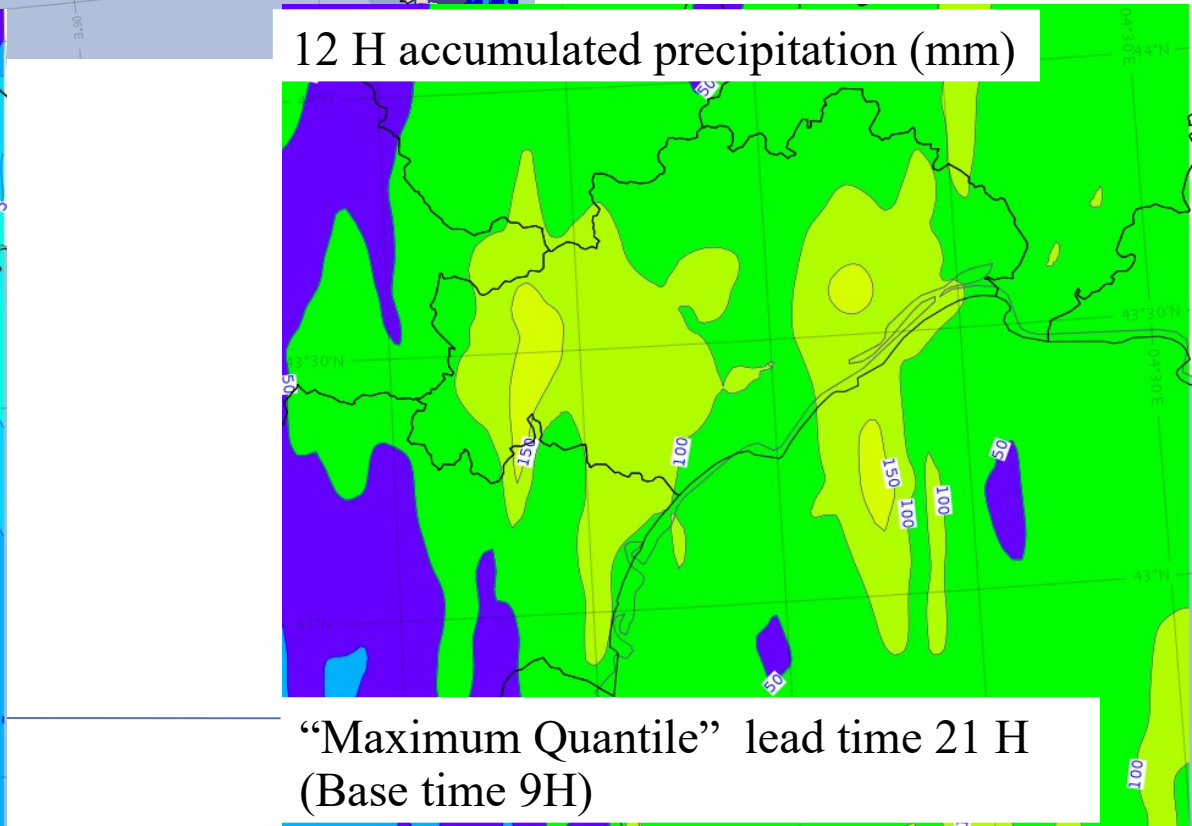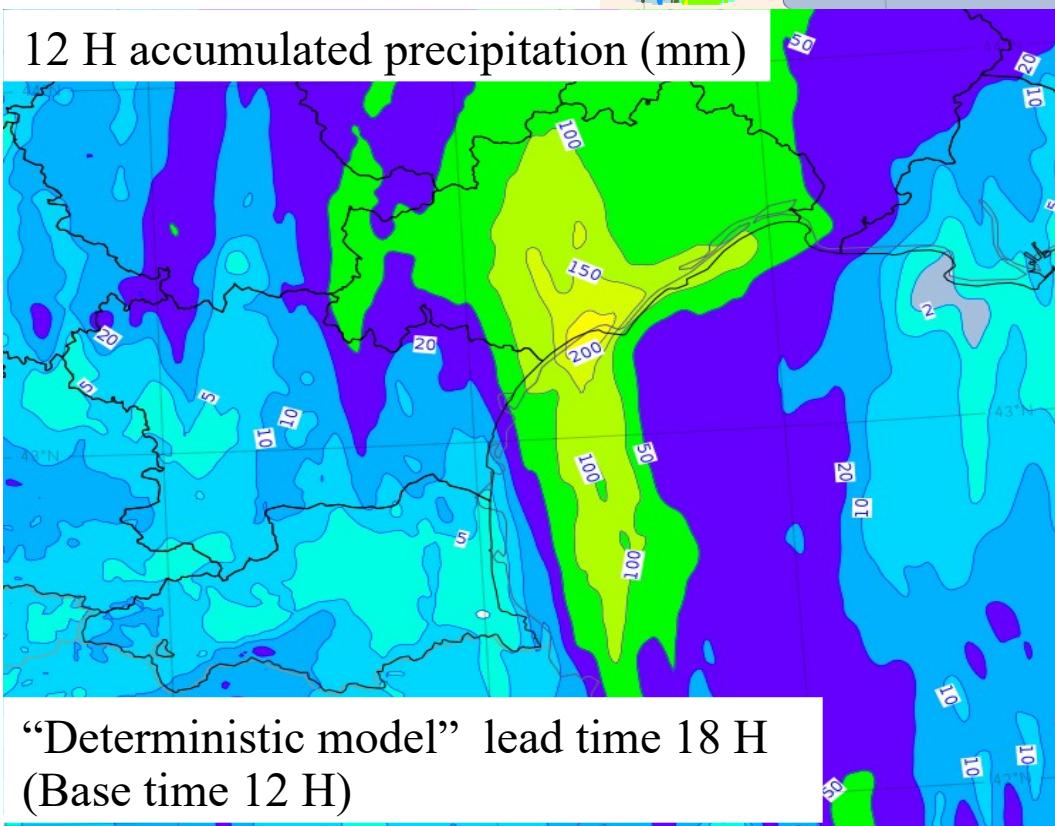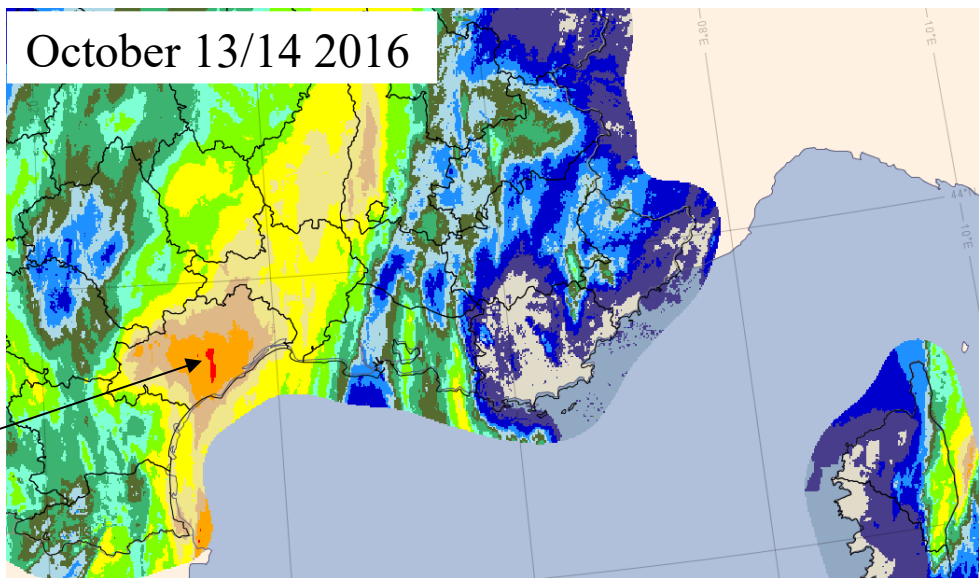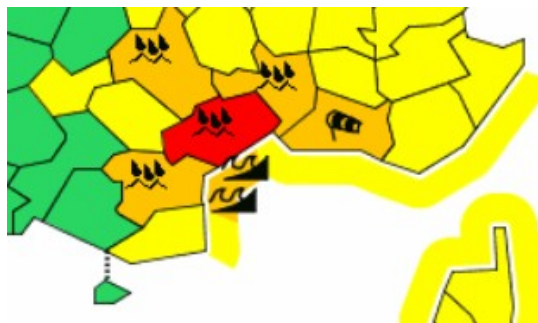Objective : 20% reduction of carbon emissions within the 5 coming years

The plan includes several measures (not all of them are detailed)

 2 examples:

One action concerns - Business travel, if duration of the journey less than 3H by train → train mandatory.

Another action is about - Radio-soundings, Project to collect radiosondes back (after carrying out vertical profiles) this could be done with a "citizen" participation, we would give the location of the radiosonde to the public (in order to limit waste in the domain of observation).

Convection-Permitting Ensemble: Current Limitations...

October 13/14 2016

OBS: 200 mm

Changes in 2022 !

12 H accumulated precipitation (mm)

12 H accumulated precipitation (mm)

"Deterministic model" lead time 18 H
(Base time 12 H)

"Maximum Quantile" lead time 21 H
(Base time 9H)

Models : Upcoming Changes :
A Revolution in the Ensembles ?

Example of a high impact case from a few years ago:

Red warning over the Hérault department for 200 mm of rainfall within 12 hours

Top left (vigilance watch map and radar observation)

Bottom left: deterministic model available for this period (very short range forecast 18h) not too bad in location and intensity.

Bottom right, "Maximum Quantile", available for this lead time, QMAX maximum value at each grid point regarding all the members of the ensemble (not a physical field!)

Reality not in the ensemble (it happens sometimes!!!)

More importantly the operational model is not included in the ensemble:

it is very embarrassing for the interpretation!

Does this mean that the operational run is unlikely? Certainly not viewing the result!

It means that the ensemble is very difficult to interpret/use for operational purposes,

indeed because of technical constraints/computing costs

- the resolution of the ensemble is lower than the high resolution deterministic,

- the base time of the ensemble is shifted (not the same as the operational run)

- there are too few members (12 at that time)

this makes the comparison between ensemble and deterministic very difficult/complicated

Major change expected in 2022, for the first time:

- resolution of the ensemble will equal the deterministic, 1.3 km/90 levels

- the determinist will be ONE MEMBER of the ensemble

- same base time for the ensemble and the deterministic,

and ensemble will be available very quickly after the arrival of the determinist.

The same for global ensemble.